Amendments to the Claims

This listing of claims will replace all prior versions and listings of claims in the application.

1. (Previously Presented) A system for de-interleaving data in a wireless receiver comprising:

a memory buffer divided into logical partitions representing radio frame blocks and physical channel blocks, each radio frame block storing a single radio frame of data, each radio frame block being divided into two or more of the physical channel blocks, the single memory buffer comprising a separate single-ported memory device for each radio frame block; and

unified means, coupled to said memory buffer, for performing a first and second de-interleaving of the data stored in said memory buffer, wherein said unified means includes means for reading and writing the data to the memory buffer in connection with said first and second de-interleaving,

wherein said unified means applies a first portion of a second de-interleaving pattern as data is written to the memory buffer, and

wherein said unified means applies a second portion of said second de-interleaving pattern as data is read from the memory buffer.

2. (Cancelled)

3. (Previously Presented) The system of claim 1, wherein said unified means performs said first de-interleaving as the stored data is read from said memory buffer.

4. (Previously Presented) The system of claim 1, wherein the data comprises radio frames and said unified means causes said radio frames to be stored in said radio frame blocks.

5. (Previously Presented) The system of claim 4, wherein the data is transmitted over one or more physical channels, wherein each of said radio frames comprises a physical channel frame associated with each physical channel, each of said radio frame blocks comprises

a physical channel block associated with each physical channel, and said unified means causes said physical channel frames to be stored in said physical channel blocks.

6. (Currently Amended) A receiver that receives data via a wireless link, said receiver comprising:

a decoding/demultiplexing unit comprising:

a memory buffer to store the data, the memory buffer being divided logically into radio frame blocks and physical channel blocks, each radio frame block storing a single radio frame of data, each radio frame block being divided into two or more of the physical channel blocks, and

means, coupled to said memory buffer, for performing a first and second de-interleaving of the data, wherein said performing means includes means for reading and writing the data to the memory buffer in connection with said first and second de-interleaving,

wherein said performing means applies a first portion of a second de-interleaving pattern as the data is written into the memory buffer,

wherein ~~performing~~ said performing means applies a second portion of said second de-interleaving pattern as the data is read from the memory buffer, and

wherein said memory buffer comprises a dual-ported memory device.

7. (Cancelled)

8. (Cancelled)

9. (Previously Presented) A system for de-interleaving data in a wireless receiver comprising:

a memory buffer divided logically into radio frame blocks and physical channel blocks, each radio frame block storing a single radio frame of data, each radio frame block being divided into two or more of the physical channel blocks; and

a read/write unit coupled to said memory buffer, wherein said read/write unit is configured to perform a first and second de-interleaving of the data,

wherein the read/write unit applies a first portion of a second de-interleaving pattern as the data is written to the memory buffer,

wherein the read/write unit applies a second portion of said second de-interleaving pattern as the data is read from the memory buffer, and

wherein the memory buffer comprises multiple memory devices in which logical divisions do not correspond to physical divisions between the devices.

10. (Cancelled)

11. (Previously Presented) A method for de-interleaving data in a wireless receiver comprising:

logically divided a memory buffer into radio frame blocks and physical channel blocks, each radio frame block storing a single radio frame of data, each radio frame block being divided into two or more of the physical channel blocks;

applying a first portion of a second de-interleaving pattern as the data is written into the memory buffer, the data being written into a rectangular matrix;

applying a second portion of said second de-interleaving pattern as the data is read from the memory buffer; and

performing a first de-interleaving on the data.

12. (Original) The method of claim 11 further comprising:

reassembling one or more physical channels from the data stored in said memory buffer;

performing a second removal of discontinuous transmission indication bits from the data stored in said memory buffer;

demultiplexing the data stored in said memory buffer into a plurality of transport channels; and

reassembling transport blocks from the data stored in said memory buffer, wherein the data comprises radio frames.

13. (Previously Presented) A method comprising:

demodulating data received via a wireless link;

storing the demodulated data in a memory buffer, the memory buffer being divided logically into radio frame blocks and physical channel blocks, each radio frame block storing a single radio frame of data, each radio frame block being divided into two or more of the physical channel blocks;

writing said data to said memory buffer to effectively perform a first portion of a second de-interleaving pattern;

reading said data from said memory buffer to form an output data stream; and

decoding said output data stream,

wherein said reading effectively performs a second portion of a second de-interleaving pattern and a first de-interleaving pattern.

14. (Previously Presented) The method of claim 13 further comprising:

reassembling one or more physical channels from the data stored in said memory buffer;

performing a second removal of discontinuous transmission indication bits from the data stored in said memory buffer;

demultiplexing the data stored in said memory buffer into a plurality of transport channels; and

reassembling transport blocks from the data stored in said memory buffer, wherein the data comprises radio frames.

15. (Currently Amended) A system for de-interleaving data received at a wireless receiver comprising:

a demodulator configured to demodulate the data;

a memory buffer, coupled to said demodulator, to store said data, the memory buffer being divided logically into radio frame blocks and physical channel blocks, each radio frame block storing a single radio frame of data, each radio frame block being divided into two or more of the physical channel blocks; and

means, coupled to said memory buffer, for performing a first and second de-interleaving of the data stored in said memory buffer, wherein said performing means includes means for reading and writing the data to the memory buffer in connection with said first and second de-interleaving,

wherein said performing means ~~performing~~ performs a first portion of said second de-interleaving as the data is written into the memory buffer and said performing means ~~performing~~ performs a second portion of said second de-interleaving and said first de-interleaving as the written data is read from said memory buffer.

16. (Cancelled)

17. (Previously Presented) The system of claim 15, wherein said performing means performs said first de-interleaving as the written data is read from said memory buffer.

18. (Previously Presented) The system of claim 1, wherein the memory buffer is divided into at least nine logical partitions represents at least nine radio frame blocks.

19. (Previously Presented) The system according to claim 18, wherein said performing means can de-interleave data from eight radio frames while a ninth radio frame is being received.

20. (Previously Presented) The system according to claim 1, wherein the physical channel blocks are sized to accommodate a maximum physical channel frame size allowed by the system.

21. (Previously Presented) The system according to claim 1, wherein the physical channel blocks are each sized to accommodate 19,200 bits per physical channel.

22. (Previously Presented) The system according to claim 1, wherein the radio frame blocks are sized to handle a maximum frame size allowed by the system.

23. (Previously Presented) The system according to claim 13, wherein said reading further effectively performs reassembling physical channels and reassembling radio frames.